Roland

DWX-50

5 AXIS / AUTO TOOL CHANGER

VPanel Guide

What is VPanel?

VPanel is a program to operate the modeling machine on the computer screen. It has functions to output cutting data, perform maintenance, and make various corrections. In addition, it displays error messages of the modeling machine.
VPanel is included in the Roland Software Package CD-ROM, which is supplied with the modeling machine. For information on how to install it, see "Setup & Maintenance Guide" of the modeling machine.

* You can also use commercial CAM software to output cutting data. For information on compatible CAM software, contact us or the dealer where you purchased the modeling machine.

For the latest information about this machine (including manuals), see the Roland DG Corp. website (http://www.rolanddg.com).

Roland DG Corporation

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Chapter 1
Basic Operations

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Displaying or Exiting VPanel

Displaying VPanel

Click (VPanel icon) in the tasktray.
VPanel will be displayed on the screen. If you cannot find in the tasktray, activate it from the start menu of Windows.

How to start VPanel from the [Start] menu of Windows

From the [Start] menu, click [All programs] (or [Programs]) - [Roland DWX-50] - [VPanel].
VPanel will be activated.

VPanel serves as a resident software.

VPanel works as a resident software which is constantly working to manage the modeling machine and send mails*, and so on. You are recommended to make settings to enable VPanel to start automatically when the computer starts. (☞ P. 9 "Settings Tab") When you click on the upper right corner of the window, the window will disappear from the screen, but the program will not be terminated. While it is running, is constantly displayed in the tasktray.

* Mail to notify the completion of cutting or an error when it occurs. (☞ P. 13 "Mail Tab")

Exiting VPanel

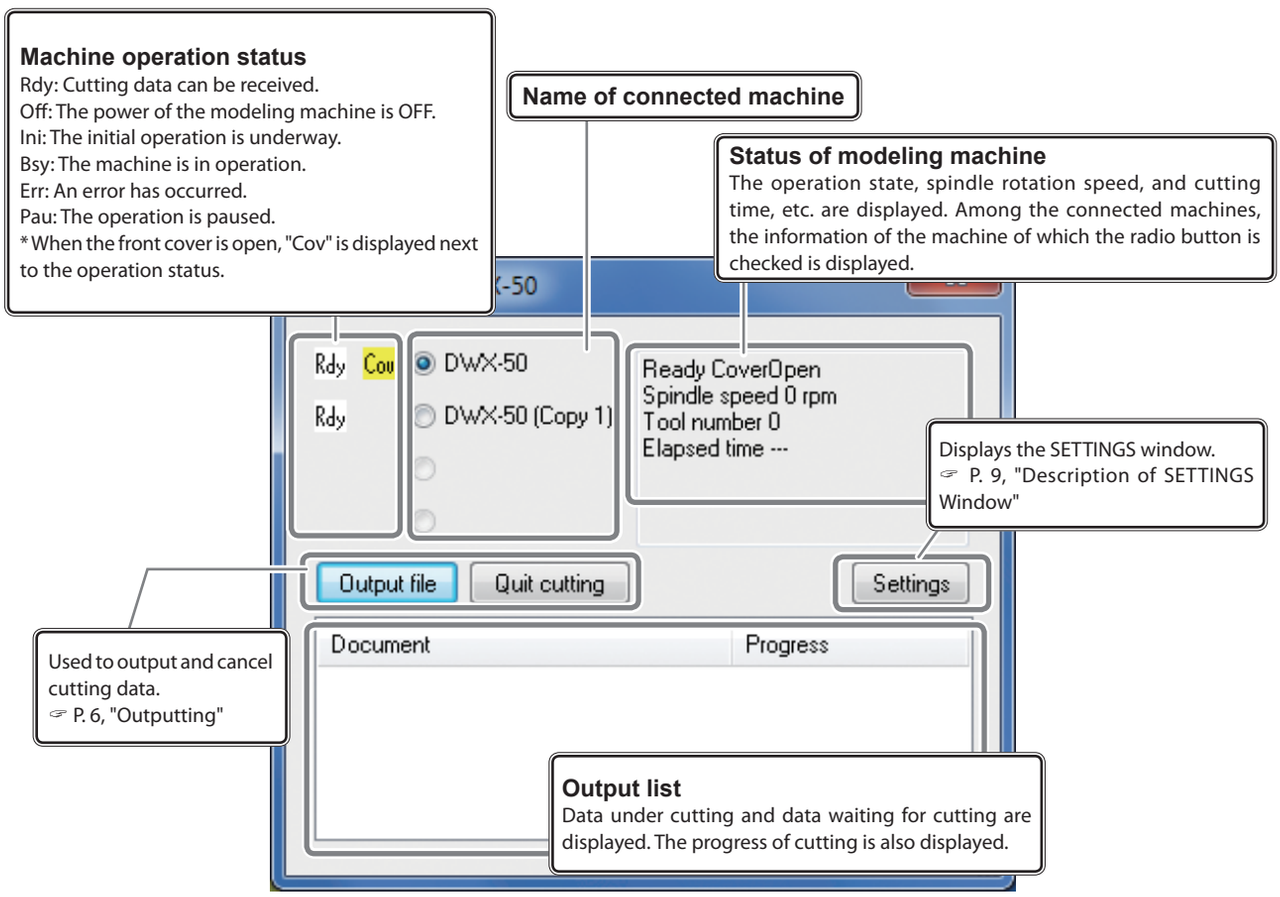
Tasktray

You can exit the program by right-clicking in the tasktray, and click [Exit].

Overview of VPanel Window

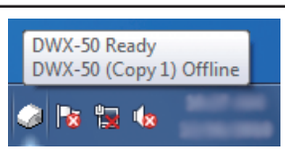
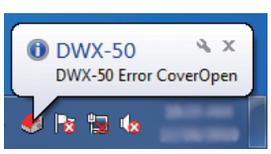
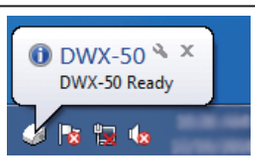
Top Window

This is the top window of VPanel. It displays the status of the connected modeling machine and output list of cutting data. Output of cutting data can also be executed by this window.


Machine operation status
Rdy: Cutting data can be received.
Off: The power of the modeling machine is OFF.
Ini: The initial operation is underway.
Bsy: The machine is in operation.
Err: An error has occurred.
Pau: The operation is paused.
* When the front cover is open, "Cov" is displayed next to the operation status.
Name of connected machine
Status of modeling machine
The operation state, spindle rotation speed, and cutting time, etc. are displayed. Among the connected machines, the information of the machine of which the radio button is checked is displayed.
Rdy
Cov
Rdy
DWX-50
DWX-50 (Copy 1)
Ready CoverOpen
Spindle speed 0 rpm
Tool number 0
Elapsed time ---
Displays the SETTINGS window.
P. 9, "Description of SETTINGS Window"
Output file
Quit cutting
Settings
Used to output and cancel cutting data.
P. 6, "Outputting"
Document
Progress
Output list
Data under cutting and data waiting for cutting are displayed. The progress of cutting is also displayed.

Display of VPanel in the Tasktray

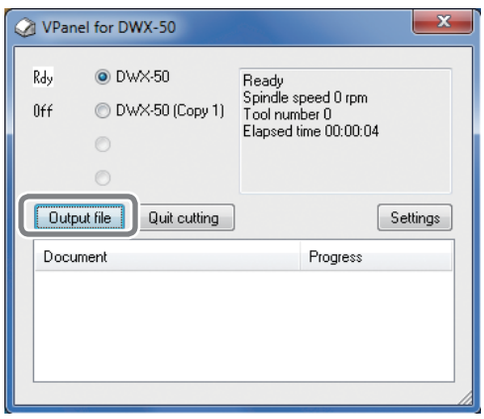
When the VPanel icon is displayed in the tasktray, the connected modeling machines are always monitored. The following statuses are displayed in the tasktray.

On/Off of the power		Among the connected modeling machines, if at least one modeling machine is ON, it is displayed in white. If no machine is ON, it is displayed in gray. You can check the machine which is ON by checking the message which appears when you place the mouse pointer on
Display when an error occurs		Among the connected modeling machines, if an error occurs on at least one modeling machine, it is displayed in red. You can check the machine on which an error occurs by checking the message which appears when you place the mouse pointer on .
Display when cutting is completed		The machine of which cutting is completed is displayed.

Outputting Cutting Data

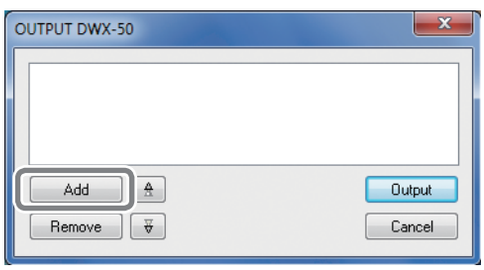
Procedure

❶



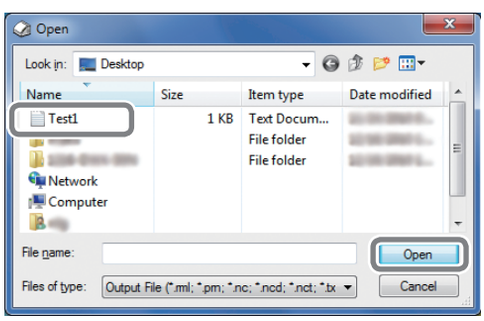
Click Output file.
The "OUTPUT" window is displayed.

❷



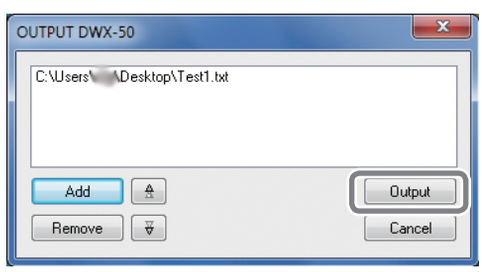
Click Add.
The "Open" window is displayed.

❸



Select cutting data and click Open.
The selected cutting data is displayed in the data list of the "OUTPUT" window.
Repeat the procedures ❷ and ❸ to output the cutting data continuously.

❹



Click Output.

Tips!

Changing the order in the data list

You can change the output order by selecting the cutting data and click ▲ or ▼ in the data list. (The cutting data is output from the top of the data list.)

Deleting cutting data in the data list

You can delete the cutting data by selecting the cutting data in the data list and click Remove.

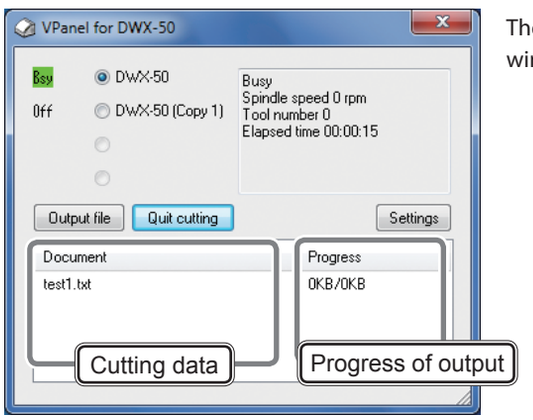
Adding cutting data by drag & drop

You can add cutting data by drag & drop data on the window displayed in the procedures ❶ and ❷.

❺

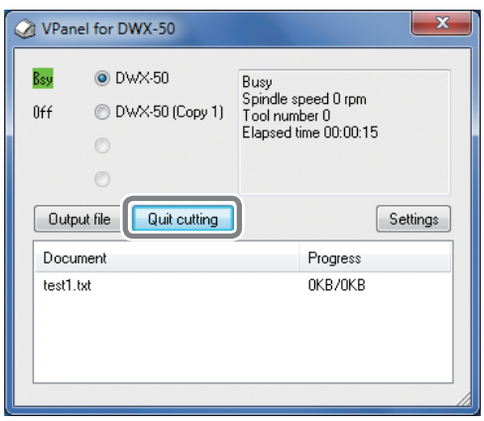
Check that a workpiece and a tool have been mounted on the modeling machine, and then click OK.

☞ "DWX-50 Operation Guide" ("STEP 1: Mounting a Workpiece," "STEP 2: Installing a Tool")



The output cutting data is displayed in the output list of the top window, and cutting starts.

Quitting Outputting



Click Quit cutting while cutting data is output.

The message shown in the figure is displayed. Click Quit when you cancel the output. Click Continue when you do not cancel the output.

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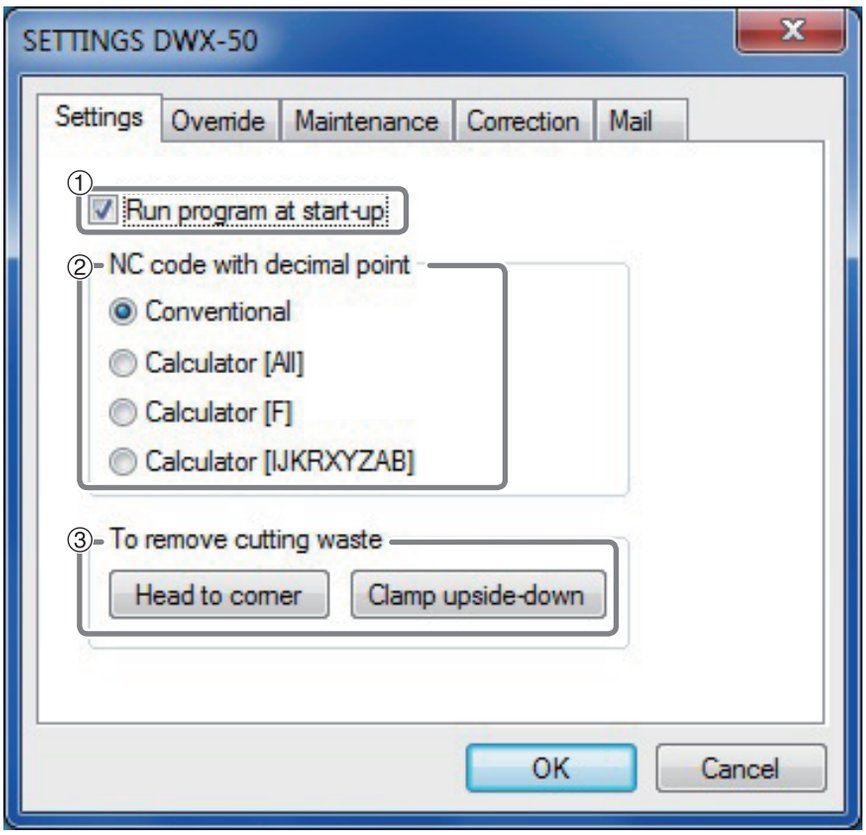
Description of SETTINGS Window

Settings Tab

In this tab, you can make the VPanel auto startup setting and settings related to the NC code, etc. When more than one machine is connected, the machine selected in the top window is the target of these settings.



① Run program at start-up

When a check is put in this checkbox, VPanel is automatically started up at the time when Windows starts up, and VPanel is displayed in the tasktray.

② NC code with decimal point

Select handling and interpretation of the decimal point for NC code. In the case of "Conventional," the unit is interpreted as millimeter (or inch) when there is a decimal point, and as 1/1000 millimeter (or 1/10000 inch) when there is no decimal point. In the case of "Calculator," the unit is always interpreted as millimeter (or inch) regardless of whether or not there is a decimal point. In the case of "Calculator," select the scope of application. Select an appropriate setting according to your CAM or NC code. (Initial setting: Conventional)

③ To remove cutting waste

These buttons are used to perform cleaning of the machine.

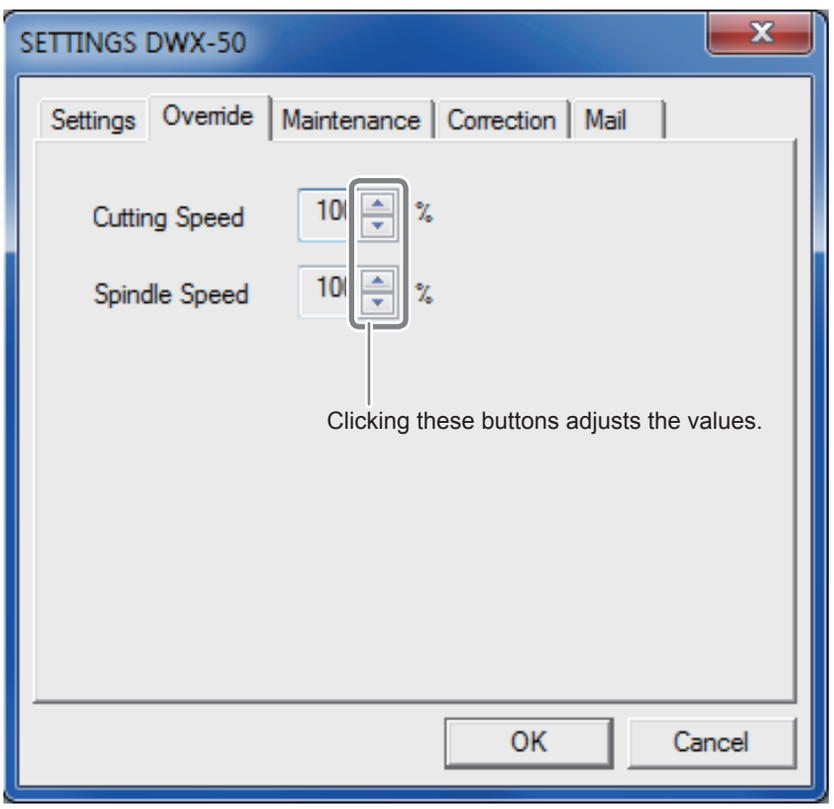
Head to corner	Every time this button is pressed, movement is done in the order of "Table backward", "Spindle head right", "Table forward", and "Spindle head left." Whenever the movement is complete, "Operation was completed" is displayed. Click "OK."
Clamp upside-down	The main clamp rotates by 180 degrees. When the movement is complete, "Operation was completed" is displayed. Click "OK."

* When the operation button of the built-in panel of the machine is pressed, the spindle head and table return to the VIEW position (i.e., the left end in the highest position for the spindle head, and the front-most position for the table).

☞ "Setup & Maintenance Guide" ("Cleaning After Cutting Operation Ends" in "Daily Maintenance").

Override Tab

In this tab, you can adjusut the "Cutting Speed" and "Spindle Speed" during cutting. This is useful when you want to change the feed rate or speed as you monitor the status of cutting.
An override value is specified as a percentage. For example, when the command in the cutting data sent from the computer is for a speed of 10,000 rpm, specifying an override of 150% produces an actual speed of 15,000 rpm.
When more than one machine is connected, the machine selected in the top window is the target of these operations.



Cutting Speed

This works on the tool movement speed of when the workpiece is being cut. The speed specified by the command in the cutting data is taken to be 100%.

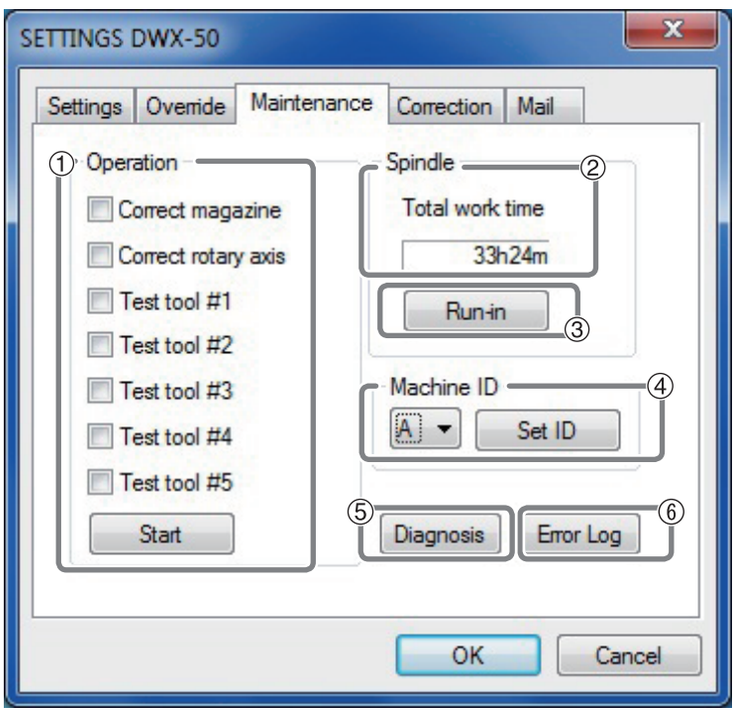
Spindle Speed

This works on the rotation speed of the spindle. The speed specified by the command in the cutting data is taken to be 100%.

- When the modeling machine is turned OFF, the override is returned to 100%.
- In the top window, not the rotation speed of the spindle after override, but the one specified by the cutting data is displayed.
- Setting an override does not let you perform operation beyond the machine's maximum or minimum speeds.

Maintenance Tab

In this tab, you can make the operations related to maintenance, such as auto correction of the modeling machine and system report. When more than one machine is connected, the machine selected in the top window is the target of these operations.



① Operation

You can make automatic correction ("Correct magazine," "Correct rotary axis") and tool replacement test ("Test tool"). You should make automatic correction when you install or relocate the machine, or when the cutting position is displaced.

Correct magazine	Correct the position of the ATC magazine.
Correct rotary axis	Correct the position of the rotary axis.
Test tool **	Perform a test to replace the tool. (** refers to #1 to #5.)

☞ "Setup & Maintenance Guide" ("STEP 2: Automatic Correction" in "Before Starting the Operation").

② Spindle

You can check the total working time of the spindle.

☞ "Setup & Maintenance Guide" ("Maintenance of the Spindle Unit" in "Periodic Maintenance").

③ Run-in

You can perform run-in operation for the spindle. You should use this function when using the machine for the first time after installation, or after moving the machine and reinstalling it at a different location.

☞ "Setup & Maintenance Guide" ("STEP 1: Spindle Run-in (Warm-up)" in "Before Starting the Operation").

④ Machine ID

You can set an ID to the machine. You should use this function when connecting more than one machine.

☞ "Setup & Maintenance Guide" ("Connecting Multiple Units").

⑤ Diagnosis

You can display the serial number, firmware version, and total operation time, etc. of the machine in a report.
You can save the system report in a text file by clicking [Save] in the System report window.

⑥ Error Log

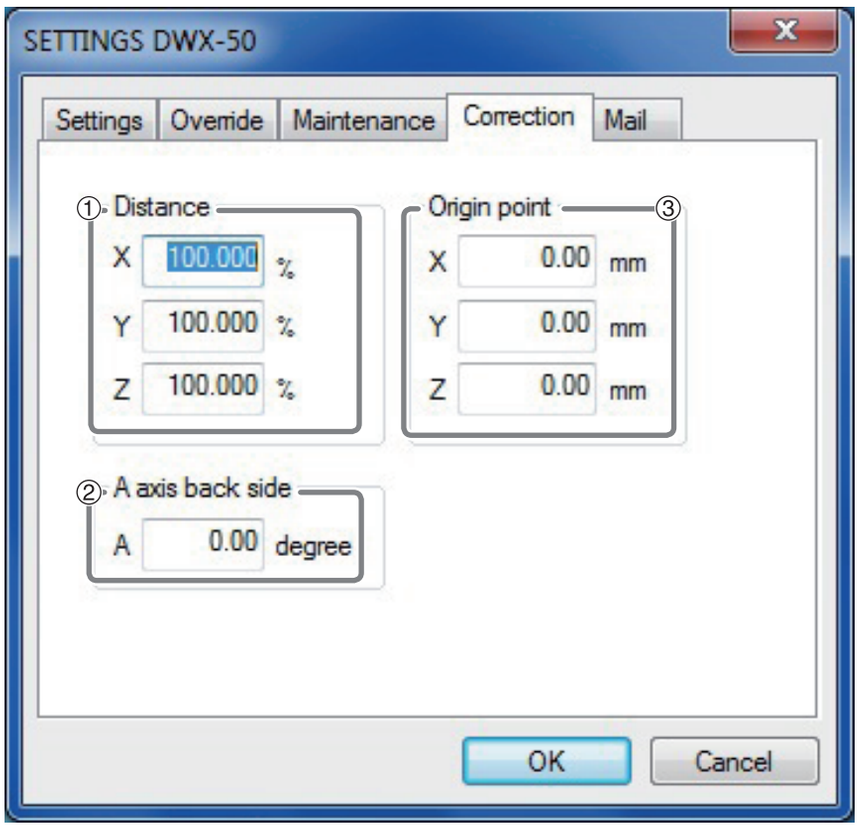
You can display the logs of the errors which have occurred so far.
You can save the system report in a text file by clicking [Save] in the System report window.

Correction Tab

In this tab, you can make corrections of the modeling machine. Perform corrections if you want to precisely adjust the accuracy. When more than one machine is connected, the machine selected in the top window is the target of corrections.

* Perform auto correction before performing this correction.

☞ P. 11, "Maintenance Tab"



① Distance (correction of distance in the XYZ direction)

You can correct the moving distance in the X, Y, and Z directions respectively. Set the correction value as considering the initial moving distance as 100%.

➢ Initial setting: 100%

② A axis back side (inversion correction of A axis)

You can correct the angle when the A axis is rotated by 180 degrees. Set the correction value as considering the initial setting as 0.00 degree.

➢ Initial setting: 0.00 degree

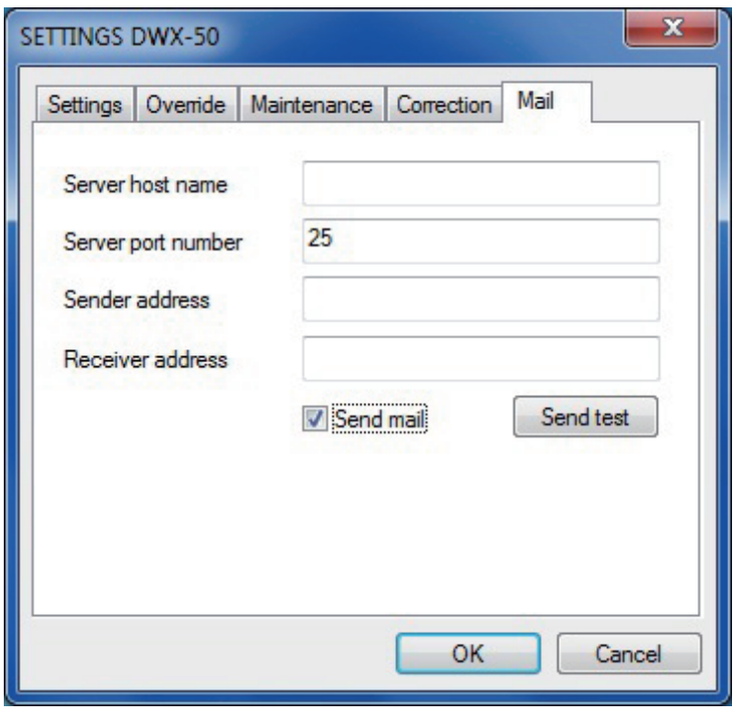
③ Origin point (correction of the origin)

You can correct the origins of the X, Y, and Z axes, respectively. Set the correction value as considering the initial setting as 0.00 mm.

➢ Initial setting: 0.00 mm

Mail Tab

In this tab, you can make the setting to receive e-mail notifying that cutting is completed or an error has occurred. When more than one machine is connected, the machine selected in the top window is the target of the setting.



When a check is put in [Send mail], you can enter each item. For information on the input values, see the table below.

Server host name	Mail sending server name (SMTP server name) of the mail software used in the computer which presently makes the settings of VPanel
Server port number	Mail sending server port number of the mail software used in the computer which presently makes the settings of VPanel
Sender address	Mail address used in the computer which presently makes the settings of VPanel (It is a mail sender address. It must be a mail address from which mail can be sent to the mail sending server explained above.)
Receiver address	Mail address of a mail receiver. You can input more than one address by separating with comma.

Click Send test to perform the sending test. If the mail with the following data arrives at the address specified in "Receiver address," the setting is complete.

Subject : <Name of the machine>
Text : TEST

When a mail failed to be sent, the "Windows Script Host" error window is displayed. Check the input items again.

Note

If using a server that requires user authentication and/or encipher, a mail cannot be sent. Use a transmission server that does not require user authentication and/or encipher.

Responding to an Error Message

This section describes the error messages that may appear on VPanel window, and how to take action to remedy the problem. If the action described here does not correct the problem, or if an error message not described here appears, contact your authorized Roland DG Corp. dealer.

* Remedies of problems are also explained in "What to Do If ..." in "Setup & Maintenance Guide."

[ERROR OCCURRED] : The tool has not been released.

The spindle unit seizes the tool and does not release it. Release the tool forcibly by following the message.

[ERROR OCCURRED] : The tool might be broken.

The tool might be broken. Stop the operation of the modeling machine and check the tool.

[ERROR OCCURRED] : The tool is too long (short).

The tool is too long or too short. Stop the operation of the modeling machine and set the tool with an appropriate length (40 to 55 mm). There is a possibility that the position of the tool holder is not correct. Check the position of the tool holder.

☞ "DWX-50 Operation Guide" ("STEP 2: Installing a Tool" in "Starting Cutting")

[ERROR OCCURRED] : The tool is not found.

The ATC magazine failed to seize the tool. The tool is not set, or it is mounted on a wrong stocker number. Set the tool again. Click "Retry" in the displayed message, and the operation is resumed. When you click "Quit," the modeling machine stops operation.

[ERROR OCCURRED] : The tool chucking has slipped out.

The tool is displaced from the collet and is about to fall. Stop cutting, check the cutting conditions, etc., and restart it from the beginning.

[ERROR OCCURRED] : The number of parameters for a RML-1 command received from the computer was incorrect.

[ERROR OCCURRED] : The parameter for a RML-1 command received from the computer was out of range.

[ERROR OCCURRED] : The RML-1 command from the computer could not be interpreted.

The operation was paused because the cutting data received from the computer was not correct, and it resulted in an error. Stop the operation of the modeling machine and check the cutting data. Then restart the operation from the beginning.

[ERROR OCCURRED] : NC code error occurred. Address is not defined.

[ERROR OCCURRED] : NC code error occurred. Parameter is not defined.

[ERROR OCCURRED] : NC code error occurred. Can not be executed.

The operation was paused because an error related to the NC code has occurred. Stop the operation of the modeling machine and check the cutting data. Then restart the operation from the beginning.

[ERROR OCCURRED] : % motor position is lost.
(% is any of "X", "Y", "Z", "A", or "B".)

Position displacement has occurred during cutting. Stop cutting, check the cutting conditions, etc., and restart it from the beginning.

[EMERGENCY STOP] : Cover opened during operation.

A front cover was opened during cutting or spindle rotation. Turn off the power, and close the front cover, and then restart the operation from the beginning.

[EMERGENCY STOP] : The spindle experienced an excessive load.

[EMERGENCY STOP] : The spindle experienced excessive current of electricity.

[EMERGENCY STOP] : The spindle control circuit temperature is high.

[EMERGENCY STOP] : The spindle motor temperature is high.

A spindle-motor error occurred. This is caused by prolonged high load on the motor or by excessive torque being applied momentarily. Turn off the power. The cutting may have exceeded the capacity of the machine. Before restarting, revise the cutting conditions. Also, allow the machine to rest for some time, because the motor may have overheated. If messages like these persist, contact your authorized Roland DG Corp. dealer.

[EMERGENCY STOP] : Spindle rotation is impossible because the spindle shaft is locked or voltage is too low.

An emergency stop occurred because the spindle cannot be rotated. Possible causes include the spindle shaft being frozen by accumulated cutting waste or the like, or a drop in voltage due to excess load on the spindle. Turn off the power, make sure no obstruction is impeding the operation of the spindle head, and take steps such as revising the cutting conditions as needed. The motor may also have overheated, so allow the machine to rest for some time before restarting. If messages like these still continue to appear, turn off the power and contact your authorized Roland DG Corp. dealer.

[EMERGENCY STOP] : A broken connection or other damage occurred between the spindle control circuit and the motor.

[EMERGENCY STOP] : A communication error occurred in the spindle control firmware.

[EMERGENCY STOP] : The spindle control firmware is inoperative.

An emergency stop occurred because of a error in spindle control. Turn off the power and restart the machine. If this message persists, turn off the power and contact your authorized Roland DG Corp. dealer.

[EMERGENCY STOP] : The chucking motor experienced excessive current.

[EMERGENCY STOP] : The chucking motor control circuit experienced excessive current.

Overcurrent flew through the chucking motor drive circuit due to overload. Turn off the power and restart the machine. If this message persists, turn off the power and contact your authorized Roland DG Corp. dealer.

[EMERGENCY STOP] : % limit switch is not found.
(% is any of "X", "Y", "Z", "A", or "B".)

The limit switch of the displayed axis cannot be detected. Turn off the power, remove the objects which block the operation of the machine and accumulated cutting waste, if any, and then restart the machine. If this message persists, turn off the power and contact your authorized Roland DG Corp. dealer.

FAQ (What to Do If…)

* Remedies for problems are also explained in "What to Do If ..." in "Setup & Maintenance Guide."

VPanel doesn't start correctly./Output cannot be made on VPanel.

Is the computer connected?

Check whether the connector cable has come loose.

Is the driver installed correctly?

If the connection to the computer is not made in the sequence described, the driver may fail to be installed correctly. VPanel does not function normally when driver is misconfigured. Check again to ensure that the connection was made using the correct procedure.

☞ "Setup & Maintenance Guide" ("Installing the Windows-based Driver" in "Installing and Setting Up the Software")

When more than one machine is connected, are the machine connected properly according to the connection method?

There is a possibility that the connection method might be incorrect when more than one machine is connected. Check the correct connection method.

☞ "Setup & Maintenance Guide" ("Connecting Multiple Units").

The detection of the ATC magazine or rotary axis failed.

Is the main clamp, detection pin, or ATC magazine contaminated?

Remove contamination on the main clamp, detection pin, or ATC magazine if any. If they are contaminated due to buildup of cutting waste or the like, the sensor cannot operate correctly, making correct detection impossible.

☞ "Setup & Maintenance Guide" ("Chapter 2 Maintenance")

Does the cover and/or cap of the dust collection capsule remain attached?

Remove the cover and cap of the dust collection capsule when you make a correction of the rotary axis.

Replacement of the tool failed.

Is the tool installed correctly?

Check the mounting position of the tool holder, or the length and diameter of the tool.

☞ "DWX-50 Operation Guide" ("STEP 2: Installing a Tool" in "Starting Cutting")

Perform auto correction.

The position of the ATC magazine might be displaced. Perform auto correction.

☞ P. 11 "Maintenance Tab"

Is the ATC magazine contaminated?

Remove contamination on the ATC magazine if any. If the ATC magazine is contaminated due to buildup of cutting waste or the like, you may fail the tool replacement.

☞ "Setup & Maintenance Guide" ("Chapter 2 Maintenance")

The cutting results are not attractive / The cutting position is displaced

Perform auto correction (correction).

Perform auto correction of the rotary axis.

☞ P. 11 "Maintenance Tab"

You can precisely correct the moving distance in the X, Y, and Z axes and the angle of the A axis, etc.

☞ P. 12 "Correction Tab"

Is the workpiece securely mounted in place?

Check the mounting state of the workpiece. Fasten the workpiece in place securely so that the workpiece will not slip out of place or come off because of vibration during cutting or tool pressure.

☞ "DWX-50 Operation Guide" ("STEP 1: Mounting a Workpiece" in "Starting Cutting")

Is the tool tip worn?

If the tip of the tool is worn, replace with a new tool.

The override cannot be set.

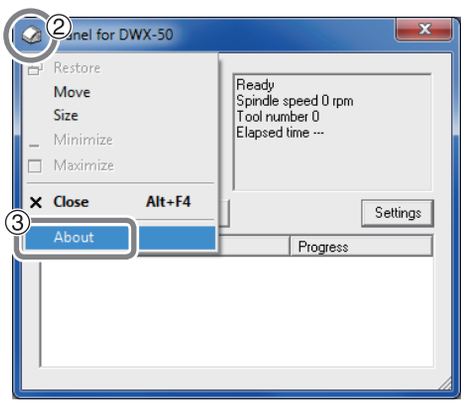
Is the computer connected?

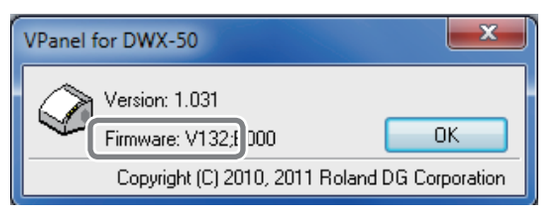
Check whether the connector cable has come loose.

Check the firmware version of the modeling machine.

If the firmware version of the modeling machine does not support the override function, the override cannot be set. You can check the firmware version with the following procedure.

① Display the top window of VPanel.
② Click the icon in the upper left of the top window.
③ Click "About".





When the "Firmware" is "V140" or later, the firmware supports the override function. (The numerals after "B" can be ignored.) If the version is prior to V140, you need to upgrade the firmware of the modeling machine. For information on how to upgrade the firmware, contact your authorized Roland DG Corp. dealer.

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